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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,470	01/23/2002	Louis Robert Litwin, JR.	PU020001	5772

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EXAMINER

BAKER, STEPHEN M

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/055,470

**Applicant(s)**

LITWIN, ET AL.

**Examiner**

Stephen M. Baker

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 061103, 012302.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the Forney algorithm block and/or Chien/Forney block as recited in claims 3, 4, 9 and 10, incorporating the cell features recited in the preceding claims, which are incompatible with Figures 5, 7 and 9 as they show FILO-ordered correction, must be shown or the features canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The abstract of the disclosure is objected to because:

As applicant's claimed invention is described as not being applicable to error correction of FILO-ordered data, and because only details of FILO-ordered data correction are clearly shown, it would appear that the essential FIFO-ordered correction aspect of the invention is sufficiently minimized (for whatever reason) within the disclosure without the need for using the ambiguous phrase "corresponding to an error correcting block implemented with a LIFO register" in line 16 of the abstract, when "compared to an error correcting block implemented with a LIFO register" is much more relevant to the claimed improvement. Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities: the related application data on page 1 is incomplete.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. Claims 1-5 and 7-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1: in lines 7-8, "on a first clock cycle corresponding to the processing of said codeword" apparently should be "on a first clock cycle", "on a first clock cycle corresponding to the processing of said error location polynomial coefficient", or the like, as the "error location polynomial coefficient" is itself generated as part of "processing of said codeword" and generation of the "error location polynomial coefficient" apparently requires a number of clock cycles beyond a first clock cycle of the decoder.

Regarding claim 7: in lines 7-8, "on a first clock cycle corresponding to the processing of said codeword" apparently should be "on a first clock cycle", "on a first clock cycle corresponding to the processing of said error location polynomial coefficient", or the like.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 5-8 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by the published article to Oh *et al* entitled "An Efficient Reed-Solomon Decoder VLSI with Erasure Correction" (hereafter "Oh").

Oh shows (Fig. 6b) a modified Chien search block ("cell") for performing a backward Chien search. Oh' modified Chien search block includes an  $\alpha^{-(N-1)j}$  multiplier

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for "multiplying an error location polynomial coefficient, on a first clock cycle corresponding to the processing of said codeword (sic), by a Galois field multiplier having a negative exponent, wherein said negative exponent is a function of a stage number (j) corresponding to said cell and the length of said codeword (N) said act of multiplying resulting in a (intermediate) cell output" ("j" = i used by Oh), and an  $\alpha^{-j}$  multiplier for "iteratively multiplying said (intermediate) cell output, for a subsequent N minus one clock cycles, wherein said positive exponent is a function of said stage number (j)".

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3, 4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oh in view of U.S. Patent Application 2003/0192007 to Miller *et al* (hereafter "Miller").

Oh does not disclose using the Chien cell to perform a Forney algorithm and including the Chien cell in a Chien/Forney block.

Miller teaches [0099-0100] benefits of performing a Forney algorithm using a Chien cell and of including the Chien cell in a Chien/Forney block. Miller's Chien cell is a modified Chien cell for performing a backward Chien search.

It would have been obvious to a person having ordinary skill in the art to apply Oh's modified Chien cell to performing a Forney algorithm within a Chien/Forney block. Such an application would have been obvious because Miller teaches benefits of performing a Forney algorithm using a Chien cell and of including the Chien cell in a Chien/Forney block.

9. Claims 3, 4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application 2003/0192007 to Miller *et al* (hereafter "Miller") in view of Oh.

Oh does not disclose using the Chien cell to perform a Forney algorithm and including the Chien cell in a Chien/Forney block.

Miller teaches [0099-0100] benefits of performing a Forney algorithm using a Chien cell and of including the Chien cell in a Chien/Forney block. Miller's Chien cell is a modified Chien cell for performing a backward Chien search. Miller does not show details of the well-known Chien cell disclosed by Oh

It would have been obvious to a person having ordinary skill in the art to apply Oh's modified Chien cell to performing a Forney algorithm within a Chien/Forney block. Such an application would have been obvious because Oh shows a well-known Chien cell for reverse Chien searching and because Miller teaches benefits of performing a Forney algorithm using a Chien cell otherwise used for reverse Chien searching and the benefits of including the Chien cell in a Chien/Forney block


***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Baker whose telephone number is (571) 272-3814. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Stephen M. Baker  
Primary Examiner  
Art Unit 2133

smb